

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A plasma processing method ~~which comprises~~
comprising the steps of:

supplying a processing gas to a vacuum vessel forming a plasma production part, and having a sample disposed therein;

producing a plasma using an antenna and a Faraday shield ~~which are~~
~~provided arranged~~ at outer periphery of the vacuum vessel and ~~to which~~ having a
high-frequency electric power can be applied, to the antenna and the Faraday shield;
and

carrying out the processing, of the sample;
wherein a voltage of at least 500 V is applied to the Faraday shield, and a ~~the~~
sample which is disposed in the vacuum vessel ~~and which is~~ a nonvolatile material
as a material to be etched is etched.

2. (currently amended) A plasma processing method ~~which comprises~~
comprising the steps of:

supplying a processing gas to a vacuum vessel forming a plasma production part;

producing a plasma using an antenna and a Faraday shield ~~which are~~
~~provided arranged~~ at outer periphery of the vacuum vessel and ~~to which~~ having a
high-frequency electric power can be applied, to the antenna and the Faraday shield
and

carrying out the processing;

wherein a voltage of at least 500 V is applied to the Faraday shield, and reaction products deposited on the inner wall of the vacuum vessel are cleaned removed therefrom.

3. (original) A plasma processing method according to claim 2, wherein the processing gas is a mixed gas comprising boron trichloride and chlorine.

4. (currently amended) A plasma processing method according to claim 3, wherein the processing gas is supplied so that the mixed gas comprises 20% of boron trichloride and 80% of chlorine, thereby cleaning the inner wall of the vacuum vessel to remove the reaction products deposited thereon.

5. (original) A plasma processing method according to claim 2, wherein a voltage of at least 1500 V is applied to the Faraday shield.

6. (currently amended) A plasma processing method which comprises comprising the steps of:

supplying a processing gas to a vacuum vessel forming a plasma production part;

producing a plasma using an antenna and a Faraday shield which are provided arranged at outer periphery of the vacuum vessel and to which having a high-frequency electric power can be applied, to the antenna and the Faraday shield; and

carrying out the processing,

wherein the method further comprises the a first step of carrying a dummy wafer onto a sample stand, applying a voltage of at least 500 V to the Faraday shield and removing foreign matters in the vacuum vessel with a plasma using a gas containing chlorine, the a second step of etching a sample which is disposed on the sample stand in the vacuum vessel and which is a nonvolatile material as a material

to be etched after the first step, and ~~the~~a third step of applying a voltage of at least 1500 V to the Faraday shield after the second step, and removing reaction products in the vacuum vessel using a mixed gas comprising boron trichloride and chlorine.

7. (currently amended) A plasma processing method which comprises comprising the steps of:

supplying a processing gas to a vacuum vessel forming a plasma production part, producing a plasma using an antenna and a Faraday shield which are provided arranged at outer periphery of the vacuum vessel and to which having a high-frequency electric power can be applied, to the antenna and the Faraday shield; and carrying out the processing, of samples;

wherein the method further comprises detecting a number of foreign matters in the vacuum vessel is detected by a monitor for foreign matters in real time during the processing of the samples, cleaning by applying a voltage of at least 500V to the Faraday shield is carried out in case when the number of foreign matters detected exceeds a given upper limit for cleaning of an inner wall of the vacuum vessel and the terminating the cleaning is terminated in case when the number of foreign matters detected decreases below a given lower limit.

Claims 8 and 9 (canceled)